

WHAT IS CLAIMED IS:

1. A force sensor assembly for use in peristaltic pumps, comprising:
a housing;
5 a load cell at least partially disposed within said housing;
a plunger, pivotable about an axis, where said plunger comprises:
an upper surface; and
an underside surface distal from said upper surface where said
underside surface cooperates with said load cell; and
10 a means for reducing said load cell's sensitivity to the positioning of an applied
force on said upper surface.
2. A force sensor assembly according to claim 1, wherein said means for reducing
said load cell's sensitivity, comprises an upper surface for receiving an intravenous
15 tube perpendicular to said axis.
3. A force sensor assembly according to claim 2, wherein said upper surface is
shaped to compensate for variations in measured force caused by the misalignment of
said applied force.
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4. A force sensor assembly according to claim 3, wherein said upper surface
shape is selected from a group consisting of the following shapes:
circular, square or hourglass.
- 25 5. A force sensor assembly according to claim 1, wherein said means for reducing
said load cell's sensitivity, comprises an upper surface for receiving an intravenous
tube parallel to said axis.
6. A force sensor assembly according to claim 5, wherein said upper surface is
30 shaped to compensate for variations in measured force caused by the misalignment of
said applied force.

7. A force sensor assembly according to claim 6, wherein said upper surface shape is selected from a group consisting of the following shapes:

circular, teardrop or triangular.

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8. A force sensor assembly according to claim 1, wherein said plunger further comprises:

a free end; and

a pivot end located at said axis.

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9. A force sensor assembly according to claim 8, wherein said pivot end is rotatably coupled to said housing.

10. A force sensor assembly according to claim 8, wherein said pivot end is

15 rotatably coupled to a body proximate said housing.

11. A force sensor assembly according to claim 8, wherein said pivot end is rotatably coupled to said housing by means of a hinge.

20 12. A force sensor assembly according to claim 11, wherein said is hinge is a living hinge.

13. A force sensor assembly according to claim 12, wherein said living hinge is a resilient metal strip.

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14. A force sensor assembly according to claim 12, wherein said living hinge is a resilient plastic strip.

15. A force sensor assembly according to claim 11, wherein said hinge is a small
30 pin pivot hinge.

16. A force sensor assembly according to claim 15, wherein said hinge has low mechanical friction.

17. A force sensor assembly according to claim 1, wherein said load cell is a
5 pressure transducer.

18. A force sensor assembly according to claim 1, wherein said load cell has low internal mechanical friction.

10 19. A force sensor assembly according to claim 1, wherein said load cell itself has a reduced sensitivity to the positioning of the applied force on said upper surface..

20. A force sensor assembly according to claim 1, wherein said underside of said plunger is shaped to contact with said load cell at a single point.

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21. A force sensor assembly according to claim 1, wherein said plunger is biased away from said load cell.

22. A force sensor assembly adapted to reduce a load cell's sensitivity to the
20 positioning of an applied force, comprising:

a housing;

a load cell at least partially disposed within said housing; and

a plunger rotatably coupled to said housing by means of a hinge, said plunger

further comprising:

25 an upper surface which is shaped to compensate for variations in measured force caused by the misalignment of said applied force.; and

an underside surface distal from said upper surface,

such that in use a force applied to said upper surface of said plunger is transferred to said load cell by said underside of said plunger pivoting into contact

30 with said load cell.

23. A force sensor assembly according to claim 22, wherein said hinge is a living hinge.

24. A force sensor assembly according to claim 23, wherein said hinge is a small
5 pin pivot hinge.